

LISTING OF THE CLAIMS

- 1 Claims 1-21 (Canceled)
- 1 Claim 22 (Currently Amended): A mat of fibrous media comprising: at least a
2 first layer layered mat portion of selected first varied and intended fiber size distribution
3 therein, said varied fiber size distribution being readily adjustable during formation
4 through a thickness dimension of said first layered mat portion and resulting in a first
5 varying permeability within said thickness of said first layer layered mat portion wherein
6 said first varying permeability increases in said thickness direction through said first layer
7 layered mat portion and having a first varying gradient density within the first layer
8 layered mat portion, wherein said first gradient density increases in a thickness direction
9 through said first layer layered mat portion and at least a second layer layered mat portion
10 of selected second varied fiber size distribution being readily adjustable during formation
11 through a thickness of said second layer layered mat portion, said varied fiber size
12 distribution and a second varying gradient density in said second layer layered mat
13 portion resulting in a second varied permeability wherein said second permeability
14 increases in said thickness direction through said second layer layered mat portion and
15 wherein said permeability of said first layer is less than said permeability of said second
16 layer, each of said first layer layered mat portion and said second layer layered mat
17 portion being formed on first and second drum collectors respectively and adjustable by
18 movement of one of said die or said drum collectors to a selected spacing, said layers
19 layered mat portions being collected from said drum collectors in a direction which is
20 generally perpendicular to a rotational axis of said drum collectors, both said first and
21 second layers layered mat portions being of substantially aligned fibers of first and

22 second selected varied fiber size distributions and varied permeability with each being
23 attenuated as layers from spaced orifice sources directly to separate, spaced collector, one
24 of such sources receiving said layers layered mat portion from the other immediately
25 preceding spaced collector source.

1 Claim 23 (Currently Amended): The mat of fibrous media of Claim 22,
2 wherein said first and second layers layered mat portions are combined in an interspersed
3 manner.

1 Claim 24 (Currently Amended): The mat of fibrous media of Claim 22,
2 wherein said first and second layers layered mat portions are combined in a successive
3 manner.

1 Claim 25 (Currently Amended): The mat of fibrous media of Claim 22,
2 wherein at least one portion of said layers layered portions is a product of turbulently
3 entangled fibers with varied fiber size distribution.

1 Claim 26 (Currently Amended): The mat of fibrous media of Claim 22,
2 wherein said fibers of said first layers layered portion are of melt blown composition and
3 said fibers of said second layered portion are of melt blown composition.

1 Claim 27 (Currently Amended): The mat of fibrous media of Claim 22, wherein
2 said fibers of said first layer layered portion are of a varied size distribution in the
3 approximate range of zero point one (0.1) to twenty seven (27) micrometers and said
4 second layer layered portion are of a varied fiber size distribution in the approximate
5 range of one (1) to fifty (50) micrometers.

1 Claim 28 (Currently Amended): The mat of fibrous media of Claim 23, wherein
2 said fibers of said first layer layered portion have a varied permeability range varying

3 within the approximate range of five (5) to two thousand (2000) cubic feet per minute per
4 square foot (cfm/ft²) permeability and said fibers of said second layers have a varied
5 permeability range varying within the approximate range of thirty (30) to four thousand
6 (4000) cubic feet per minute per square foot (cfm/ft²) permeability.

1 Claim 29 (Currently Amended): A mat of fibrous filter media comprising: at least
2 a first layer layered filter media mat portion of synthetic melt blown composition with
3 approximate first varied and intended fiber size distributions increasing through a
4 thickness dimension of said first layer layered mat portion, said first layer layered mat
5 portion further comprising a varying gradient density increasing in said thickness
6 dimension and varying permeability, said fiber size distribution of said first layered mat
7 portion varying within the approximate range of zero point one (0.1) to twenty seven (27)
8 micrometers and an increasing permeability within said first layer layered mat portion
9 varying within the approximate range of five (5) to two thousand (2000) cubic feet per
10 minute (cfm/ft²) and, a second successive layer layered filter media mat portion of
11 synthetic melt blown composition with a second varied fiber size distributions within said
12 second layer layered mat portion and further comprising varying gradient density and
13 permeability with said second layer layered mat portion, said varied fiber size distribution
14 and gradient density increasing in said thickness dimension of said second layer mat
15 portion, said fiber size distributions varying within the approximate range of one (1) to
16 fifty (50) micrometers and increasing permeability within the approximate range of thirty
17 (30) to four thousand (4000) cubic feet per minute per square foot (cfm/ft²), wherein said
18 increasing permeability of said first layer is less than said increasing permeability of said
19 second layer and each layer layered portion having been attenuated as layers from

20 selectively spaced melt blown orifice sources to separate spaced rotating collector
21 sources with one of such sources receiving said layer layered mat portion from the other
22 immediately preceding collector source, said first layer layered mat portion and said
23 second layer layered mat portion formed on first and second said collector sources
24 respectively, wherein one of said melt blown orifice sources and said rotating collector
25 sources is adjustable relative to the other of said melt blown orifice sources and said
26 rotating collector sources, each of said first and second collector sources having a
27 rotational axis, wherein said first and second layers mat portions are collected from said
28 first and second collector melt blown orifice sources in a direction which is generally
29 tangent to a rotational surface of each of said collector sources.

1 Claims 30-32 (Canceled):

1 Claim 33. (Currently Amended): A fibrous filter media comprising a plurality of
2 fibrous layers, said plurality of fibrous layers having a first and second fibrous layer, said
3 first fibrous layer having a first varied and intended fiber size distribution varying
4 substantially continuously and first increasing permeability through a thickness
5 dimension of said first layer and first varied porosity and varied gradient density within
6 said first layer and increasing through said thickness dimension of said first fibrous layer,
7 said second fibrous layer having a second varied fiber size distribution varying
8 substantially continuously and second increasing permeability within said second layer
9 and second varied porosity and varied gradient density within said second layer
10 increasing through said thickness dimension, said first and said second fibrous layers
11 each being attenuated as layers from spaced orifice sources directly to separate, spaced
12 rotating collector sources with one of such sources receiving said layered mat portion

13 from the other immediately preceding spaced rotating collector source forming a mat of
14 fibrous media, said spaced collector sources comprising a first collector source and a
15 second collector source, said first and second collector sources each having a rotation
16 axis, said rotation axes being generally perpendicular to the direction of collection of said
17 first fibrous layer and said second fibrous layer, wherein one of said spaced orifice
18 sources and said corresponding collector sources is adjustable relative to the other of said
19 spaced orifice sources and said corresponding collector sources.

1 Claim 34. (Previously Presented): The fibrous filter media of Claim 33 wherein
2 said first fiber size varies within in a range within the range of approximately 0.1 to 27
3 micrometers.

1 Claim 35. (Previously Presented): The fibrous filter media of Claim 33
2 wherein said first porosity varies within in a range within the range of approximately 5 to
3 2000 cfm/ft².

1 Claim 36. (Previously Presented): The fibrous filter media of Claim 33
2 wherein said second fiber size varies within in a range within the range of approximately
3 1 to 50 micrometers.

1 Claim 37. (Previously Presented): The fibrous filter media of Claim 33
2 wherein said second porosity varies within in a range within the range of approximately
3 30 to 4000 cfm/f².

1 Claim 38. (Previously Presented): The fibrous filter media of Claim 33
2 wherein said plurality of fibrous layers have a synthetic composition.

1 Claim 39. (Previously Presented): The fibrous filter media of Claim 33
2 wherein said plurality of fibrous layers has a third fibrous layer adjacent said second

3 fibrous layer and having a third varied fiber size distribution and third varied porosity,
4 said third varied fiber size distribution being substantially similar to said second varied
5 fiber size distribution and said third varied porosity being substantially similar to said
6 second varied porosity.

1 Claim 40. (Previously Presented): The fibrous filter media of Claim 33
2 wherein at least one of said plurality of fibrous layers has a portion of the fibers having
3 been curled and entangled.

1 Claim 41. (Previously Presented): The fibrous filter media of Claim 33
2 wherein said first varied fiber size distribution range is smaller than said second varied
3 fiber size distribution range.

1 Claim 42. (Previously Presented): The fibrous filter media of Claim 33
2 wherein said first fibrous layer has a smooth surface opposite said second fibrous layer,
3 said first varied fiber size distribution range being less than said second varied fiber size
4 distribution range.

1 Claim 43. (Previously Presented): The fibrous filter media of Claim 33
2 wherein said first fibrous layer has a smooth surface opposite said second fibrous layer,
3 said second fibrous layer having curled and entangled fibers with a greater size
4 distribution range than said first varied fiber size distribution range.

1 Claim 44. (Previously Presented): The fibrous filter media of Claim 33
2 wherein said first fibrous layer has a smooth surface opposite said second fibrous layer,
3 said second fibrous layer having a greater varied fiber size distribution range than said
4 first varied fiber size distribution range, said second fibrous layer having a smooth
5 surface opposite said first fibrous layer.